

Applicants respectfully submit that all pending claims fully satisfy the requirements of 35 U.S.C. § 112.

35 U.S.C. § 102

The Examiner rejected: claims 1, 7, 9-12, 15, and 17-19 under 35 U.S.C. § 102 as allegedly anticipated by Kato et al.; claims 1, 2, 7, 9-12, 14-22, and 29-31 under 35 U.S.C. § 102 as allegedly anticipated by Yonemitsu et al.; claims 1, 2, 7, 9-12, 14-16, 18-22 and 30 under 35 U.S.C. § 102 as allegedly anticipated by Suda et al.; claims 1, 7, 9-11, 15, and 17-19 under 35 U.S.C. § 102 as allegedly anticipated by Soraoka et al.; claims 1, 7-11, 14, 15, 18 and 19 under 35 U.S.C. § 102 as allegedly anticipated by Tabrizi et al.; and claims 1, 3, 5, 7-12, 15, 16, 18 and 19 under 35 U.S.C. § 102 as allegedly anticipated by Kato et al.

Applicants respectfully submit that none of the cited references mentioned above anticipates any of the pending claims in this patent application for at least the following reasons.

Kato et al.

Claim 1

Among other things, the system of claim 1 includes:

“a plurality of processing chambers aligned with the transfer path”

As disclosed in the specification, such an arrangement provides for a more efficient utilization of space and better expandability than prior art systems (see, e.g., page 4, lines 3-15; page 12, lines 10-16).

Such a feature is clearly not disclosed from Kato et al. Even a cursory inspection of FIG. 3 shows that the processing chambers 11a, 11b and 11c are not aligned with each other - never mind being aligned with the transfer path 13! Indeed, the system of FIG. 3 cited by the Examiner is very similar to the prior art system of FIG. 1 of the present specification. Accordingly, it is not possible for Kato et al. to anticipate the system of claim 1.

Moreover, as amended claim 1 includes a feature that a load lock chamber is directly connected to one side of the processing chambers. In contrast, as clearly shown in FIG. 3 of Kato et al. the load lock chambers 5, 6 are not directly connected to one side of the processing chambers 11a, 11b, or 11c.

For at least the foregoing reasons, the system of claim 1 is deemed patentable over Kato et al.

Claim 17

Among other things, the system of claim 17 includes in the transfer path a plurality of transfer mechanisms installed to transfer wafers from one transfer mechanism to another. Applicants respectfully fail to see where any such plurality of transfer mechanisms in the transfer path are disclosed in Kato et al. If the Examiner believes such a plurality of transfer mechanisms are disclosed by Kato et al. he is respectfully requested to identify them.

Yonemitsu et al.Claims 1 & 20

As amended, claims 1 and 20 each include a feature that a load lock chamber is directly connected to one side of the processing chambers. In contrast, as clearly shown for example in FIG. 2 of Yonemitsu et al. the load lock module 300 is not directly connected to one side of the processing chambers 70.

Moreover, with respect to claim 20, the system of claim 20 includes a feature wherein the plurality of processing chambers are adjoining the transfer path. In contrast, as clearly shown for example in FIG. 2 of Yonemitsu et al. none of processing chambers 70 is adjoining the transfer path 200.

For at least the foregoing reasons, the systems of claims 1 and 20 are deemed patentable over Yonemitsu et al.

Claims 17 & 29

Among other things, the systems of claim 17 and 29 each include in the transfer path a plurality of transfer mechanisms installed to transfer wafers from one transfer mechanism to another. Applicants respectfully fail to see where any such plurality of transfer mechanisms in the transfer path to transfer wafers from one transfer mechanism to another are disclosed in Yonemitsu et al. The Examiner has only cited the single transfer mechanism 20. If the Examiner believes such a plurality of transfer mechanisms are disclosed by Yonemitsu et al. he is respectfully requested to identify them.

Claim 31

In similarity to claim 20, the system of claim 31 includes the feature wherein the plurality of processing chambers are adjoining the transfer path. As explained above with respect to claim 20, such a feature is clearly absent from Yonemitsu et al.

For at least the foregoing reasons, the system of claim 31 is deemed patentable over Yonemitsu et al.

Suda et al.

Claims 1 & 20

As amended, claims 1 and 20 each include a feature that a load lock chamber is directly connected to one side of the processing chambers. In contrast, as clearly shown for example in FIGs. 1A&B of Suda et al., the load lock chamber 52 is not directly connected to one side of the processing chambers 56.

Moreover, with respect to claim 20, the system of claim 20 includes a feature wherein the plurality of processing chambers are adjoining the transfer path. In contrast, as clearly shown for example in FIGs. 1A&B of Suda et al., none of processing chambers 56 is adjoining the transfer path 100.

For at least the foregoing reasons, the systems of claims 1 and 20 are deemed patentable over Suda et al.

Claim 8

Among other things, in the system of claim 8, the plurality of processing chambers have one common load lock chamber. In contrast, as can be seen for example in FIGs. 1A&B, Suda et al. discloses a system where each process chamber

56 has its own corresponding load-lock chamber 52. Therefore, it is impossible for Suda et al. to anticipate the system of claim 8.

For at least the foregoing reasons, the system of claim 8 is deemed patentable over Suda et al.

Claim 9

Among other things, in the system of claim 9, the plurality of processing chambers are connected by gates such that wafers can be directly moved from one processing chamber to another. In contrast, as can be seen for example in FIGs. 1A&B, Suda et al. each process chamber 56 has its own corresponding transfer chamber 54 and load-lock chamber 52. It is not possible in the system of Suda et al. to directly move wafers from one processing chamber to another.

For at least the foregoing reasons, the system of claim 9 is deemed patentable over Suda et al.

Claim 31

In similarity to claim 20, the system of claim 31 includes the feature wherein the plurality of processing chambers are adjoining the transfer path. As explained above with respect to claim 20, such a feature is clearly absent from Suda et al. For at least the foregoing reasons, the system of claim 31 is deemed patentable over Suda et al.

Soraoka et al.

Claim 1

As amended, claim 1 includes a feature that a load lock chamber is directly connected to one side of the processing chambers. In contrast, as clearly shown for example in FIG. 3 of Soraoka et al. the load lock chamber 5 is not directly connected to one side of the processing chamber 2.

For at least the foregoing reasons, the system of claim 1 is deemed patentable over Soraoka et al.

Claim 8

Among other things, in the system of claim 8, the plurality of processing chambers have one common load lock chamber. In contrast, as can be seen for example in FIGs. 3 and 5, Soraoka et al. discloses a system where each process chamber has its own corresponding load-lock chamber 52. Therefore, it is impossible for Soraoka et al. to anticipate the system of claim 8.

For at least the foregoing reasons, the system of claim 8 is deemed patentable over Soraoka et al.

Claim 9

Among other things, in the system of claim 9, the plurality of processing chambers are connected by gates such that wafers can be directly moved from one processing chamber to another. In contrast, as can be seen for example in FIGs. 3 and 5, Soraoka et al. each process chamber 6 has its own corresponding transfer chamber 10 and load-lock chamber 5. It is not possible in the system of Soraoka et al. to directly move wafers from one processing chamber to another.

For at least the foregoing reasons, the system of claim 9 is deemed patentable over Soraoka et al.

Claim 17

Among other things, the system of claim 17 includes *in the transfer path* a plurality of transfer mechanisms installed to transfer wafers from one transfer mechanism to another. Applicants respectfully fail to see where any such plurality of transfer mechanisms in the transfer path are disclosed in Kato et al. If the Examiner believes such a plurality of transfer mechanisms are disclosed by Kato et al., he is respectfully requested to identify them.

Tabrizi et al.

Claim 1

As amended, claim 1 includes a feature that a load lock chamber is directly connected to one side of the processing chambers. In contrast, as clearly shown for example in FIGs. 4&5 of Tabrizi et al., the load lock chambers 406a/406b are not directly connected to one side of the processing chamber 410.

Moreover, it does not even appear that Tabrizi et al. discloses the claimed plurality of processing chambers. It appears that Tabrizi et al. only discloses a single processing chamber 410 that includes multiple processing stations within the chamber.

For at least the foregoing reasons, the system of claim 1 is deemed clearly patentable over Tabrizi et al.

Claim 8

Among other things, in the system of claim 8, a plurality of processing chambers have one common load lock chamber. As explained above, Tabrizi et al. does not appear to even disclose a system having multiple processing chambers. Moreover, in the system disclosed by Tabrizi et al., the one process chamber 410 requires two load-lock chambers 406a/406b. Therefore, it is impossible for Tabrizi et al. to anticipate the system of claim 8.

For at least the foregoing reasons, the system of claim 8 is deemed patentable over Tabrizi et al.

Claim 9

Among other things, in the system of claim 9, the plurality of processing chambers are connected by gates such that wafers can be directly moved from one processing chamber to another. Again, as explained above, it does not appear that Tabrizi et al. even discloses a plurality of processing chambers. Tabrizi et al. certainly does not disclose that a plurality of processing chambers are connected by gates such that wafers can be directly moved from one processing chamber to another. to directly move wafers from one processing chamber to another.

For at least the foregoing reasons, the system of claim 9 is deemed patentable over Tabrizi et al.

Park

Claim 1

Among other things, the system of claim 1 includes:

"a plurality of processing chambers aligned with the transfer path"

As disclosed in the specification, such an arrangement provides for a more efficient utilization of space and better expandability than prior art systems (see, e.g., page 4, lines 3-15; page 12, lines 10-16).

Such a feature is clearly not disclosed from Park. Even a cursory inspection of FIG. 3 shows that the processing chambers 100 are not aligned with each other - never mind being aligned with the transfer path 400! Indeed, the system of FIG. 3 cited by the Examiner is very similar to the prior art system of FIG. 1 of the present specification. Accordingly, it is not possible for Park to anticipate the system of claim 1.

Moreover, in the system of claim 1, the transfer path is at atmospheric pressure. Applicants have carefully inspected Park and do not see any disclosure that the transfer path 400 is under atmospheric pressure.

For at least the foregoing reasons, the system of claim 1 is deemed clearly patentable over Park.

Claim 3

Among other things, in the system of claim 3, each processing chamber has a gate formed on a side away from the transfer path. Applicants respectfully fail to see where any such feature is disclosed in Park. If the Examiner believes such gates are disclosed by Park, he is respectfully requested to identify them.

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35 U.S.C. § 103

The Examiner rejected claims 5, 6, 13, 24-28 and 32 under 35 U.S.C. § 103 as allegedly being unpatentable over Yonemitsu et al. or Suda et al. in view of Maydan et al. U.S. Patent 4,951,601 ("Maydan et al.").

Applicants respectfully traverse these rejections for at least the following reasons.

Claims 5, 6 and 13

The Examiner has cited Maydan et al. as allegedly showing the claimed transfer arm and inner transfer device of claims 5 and 6, and the separate transfer arm of claim 13. Nevertheless, claims 5 and 6 are each deemed allowable for at least the reasons set forth above with respect to claim 1 from which claims 5 and 6 depend.

Claims 24-28

The Examiner has cited Maydan et al. as allegedly showing the claimed transfer arm and inner transfer device of claims 24-25, and the separate transfer mechanism of claims 26-28. Nevertheless, claims 24-28 are each deemed allowable for at least the reasons set forth above with respect to claim 20 from which claims 24-28 depend.

Claim 32

The Examiner has cited Maydan et al. as allegedly showing the claimed transfer mechanism of claim 32. Nevertheless, claim 32 is deemed allowable for at least the reasons set forth above with respect to claim 31 from which claim 32 depends.

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CONCLUSION

In view of the foregoing explanations, Applicant respectfully requests that the Examiner reconsider and reexamine the present application, allow claims {pending claim numbers}, and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact Kenneth D. Springer (Reg. No. 39,843) at (703) 715-0870 to discuss these matters.

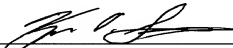
If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 50-0238 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17, particularly extension of time fees.

Respectfully submitted,

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By: _____


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